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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,973	11/24/2003	Wolfgang Singer	637.0012USX	5197

7590 05/12/2006

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EXAMINER

GUTIERREZ, KEVIN C

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/720,973	Applicant(s) SINGER ET AL.	
	Examiner Kevin Gutierrez	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-35,37-42 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-35,37-42 and 47-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed March 15, 2006, with respect to the Drawings and Claims have been fully considered and are persuasive. The objection(s) of the Drawings and Claims has been withdrawn.
2. Applicant's arguments, see Remarks, filed March 15, 2006, with respect to the rejection(s) of the Claims under **35 USC 102** and **103** have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art. Koch et al. patent does not disclose "a movable carrier upon which said plate is arranged, for positioning plate relative to said beam." However, this deficiency is taught by the Nojima (5,978,072) patent, where a movable carrier coupled with an optical element (plate) is for positioning for positioning said optical element (col. 10, lines 18-20).

DETAILED ACTION

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 27-28, 34-42 and 47-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Koch et al. (6,195,201) in view of Nojima (5,978,072).

Regarding claim 27, Koch et al disclose

- “a plate (41; base;) having a plurality of raster elements (42; facets) situated thereon for directing a light beam having a wavelength ≤ 193 nm (col. 1, lines 31-33)”

Koch et al. does not disclose

- “a movable carrier upon which said plate is arranged, for positioning said plate relative to said light beam.”

However, having “a movable carrier upon which said plate is arranged, for positioning said plate relative to said light beam” is well-known to the art as it is evident by the teaching of Nojima (col. 5, lines 20-28; col. 10, lines 18-20, where an XYZ mechanism is coupled to an optical element and is capable of adjusting optical element in X, Y, or Z positions). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the plate of Koch et al. by including a movable carrier utilized in a manner described above for at least the purpose to adjust focus and/or magnification of an image.

Regarding claim 28, Koch et al disclose “a reticle plane, wherein said reticle plane is defined by a y-direction and an x-direction (col. 9, lines 38-39, where it is conceivable that a plane can have reference two-dimensional coordinates), but does not disclose “wherein said carrier is moveable in said x-direction.”

However, having “said carrier is moveable in said x-direction” is known to the art as it is evident by the teaching of Nojima (col. 5, lines 20-28). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify Koch et al. by including a carrier moveable in a manner described above for at least the purpose to perform an alignment measurement.

Regarding claim 31, Koch et al. further disclose “wherein said light beam impinges onto plurality of raster elements (col. 5, lines 41-44), and said plurality of raster elements partition said light beam into a plurality of light bundles (col. 4, lines 28-30), and wherein said plurality of light bundles substantially overlap one another in

Regarding claim 34, Koch et al. further disclose “wherein at least one of said plurality of a raster elements (42) comprises an actuator for positioning said at least one of said plurality of raster elements relative to said light beam (col. 5, lines 35-38).”

Regarding claim 35, Koch et al. further disclose “wherein said actuator changes an orientation of said raster element relative to said plate (col. 5, lines 35-38 and 57-59).”a reticle plane (col. 10, lines 24-25).”

Regarding claim 36, Koch et al. further disclose “wherein said raster element is one of a plurality of raster elements on said plate (col. 4, lines 28-30 and col. 5, lines 53-54).”

Regarding claim 37, Koch et al. as modified further disclose the claimed limitations set forth in claims 27 and 31.

Regarding claim 38, Koch et al. further disclose wherein said plurality of light bundles substantially overlap one another in a reticle plane of said illumination system and “define a ring field of illumination in said reticle plane (col. 6, lines 35-37 and 41-42), and wherein at least one of said plurality of raster elements is adjustable to change said ring field of illumination in said reticle plane (col. 6, lines 66-67; col. 7, lines 1-2; col. 8, lines 52-54).”

Regarding claim 39, Koch et al. disclose the claimed limitations and further disclose “when adjusted to change said ring field of illumination in said reticle plane, also changes an illumination in an exit pupil of said illumination system (col. 10, lines 35-40).”

Regarding claims 40-42, Koch et al “wherein said at least one of said plurality of raster elements is tiltable”, “displaceable” (col. 6 lines 21-24), and “replaceable (col. 5, lines 23-24, where any dimension of an array is preferred).”

Regarding claims 47 and 49, Koch et al. disclose all of the claimed limitations set forth in claim 27 and further disclose “a projection objective for imaging said object onto a light sensitive substrate (col. 4, lines 52-54 and 65-67).”

Regarding claim 48, Koch et al. further disclose “wherein said object is a pattern bearing mask (col. 2, lines 47-49).”

5. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch et al. in view of Nojima, as applied to claims 27-28, 34-42 and 47-49, and in further view of Hatakeyama et al (6,015,976).

Regarding claim 29, Koch et al. as modified disclose all of the claimed limitations except for “a reticle is moveable in a first direction.”

However, having a reticle moveable in a first direction is routine in the art as taught by Hatakeyama et al (col. 17, lines 40-41). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the reticle of Koch et al by having it allowable to move in a first direction for at least the purpose to adjust an alignment of the optical system.

Regarding claim 30, Nojima further disclose “wherein said second direction is substantially perpendicular to said first direction (col. 10, lines 18-20, where an optical element is arranged to be moved in the X, Y, or Z direction).”

6. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koch et al. in view of Nojima, as applied to claims 27-28, 34-42 and 47-49, and in further view of Shiraishi (US 2002/0196416).

Regarding claim 32, Koch et al. as modified disclose a plate and a carrier, but does not disclose “wherein said plate is one of a plurality of plates arranged on said carrier.”

However, having a plurality of plates is known to the art as it is evident by the teaching of Shiraishi (see fig. 38, where a fly eye lens group 111A-B are on a movable member 112; [0234], lines 8-12). Thus, it would be obvious to one ordinary skilled in the art at the time the invention was made to further modify the carrier of Koch et

al. as modified by including a plurality of plates in a manner described above for at least the purpose to select a desired illumination region.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Gutierrez whose telephone number is (571)-272-5922. The examiner can normally be reached on Monday-Friday: 7:30 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Gutierrez
Examiner
Art Unit 2851

May 10, 2006


Rodney Fuller
Primary Examiner

approved, *for* 5-10-06

REPLACEMENT SHEET
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Fig.4a

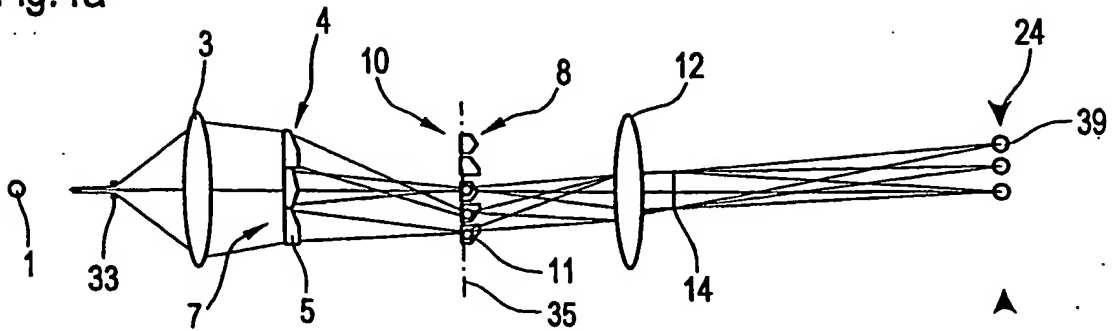


Fig.4b

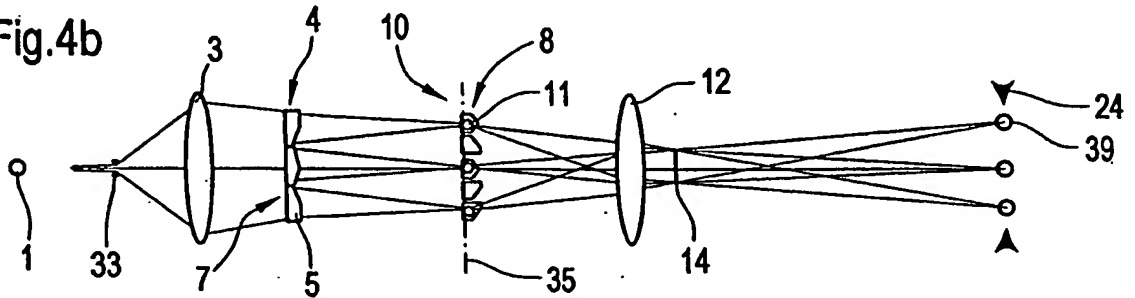


Fig.5a

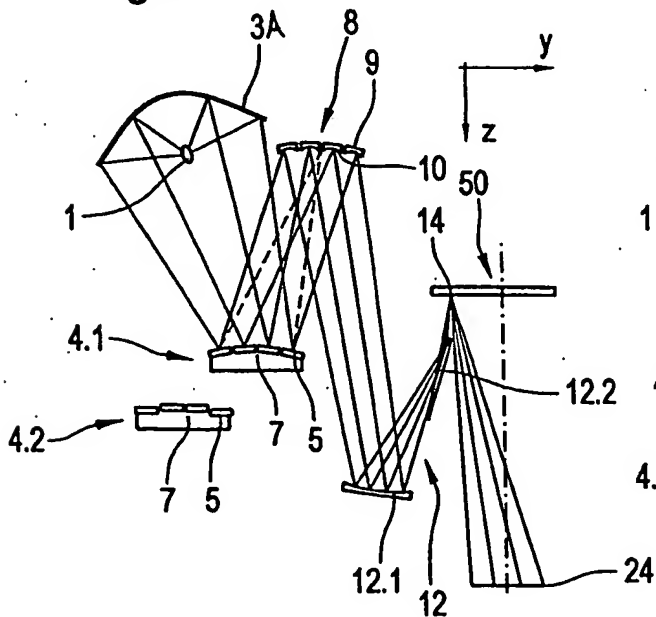
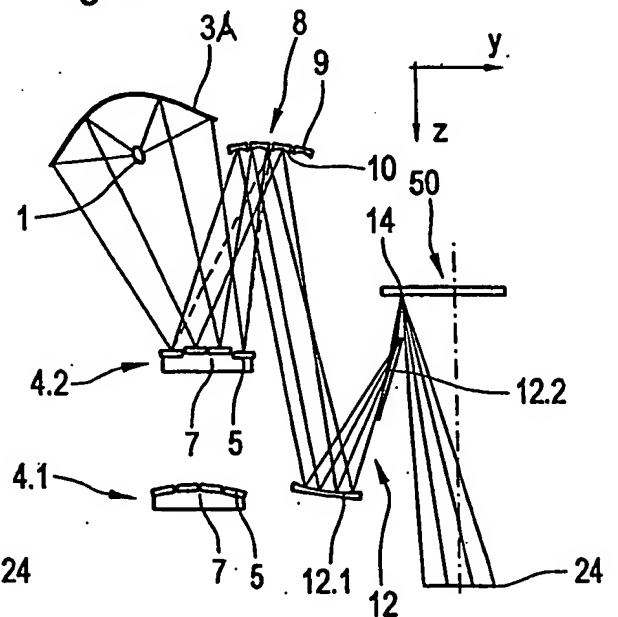


Fig.5b



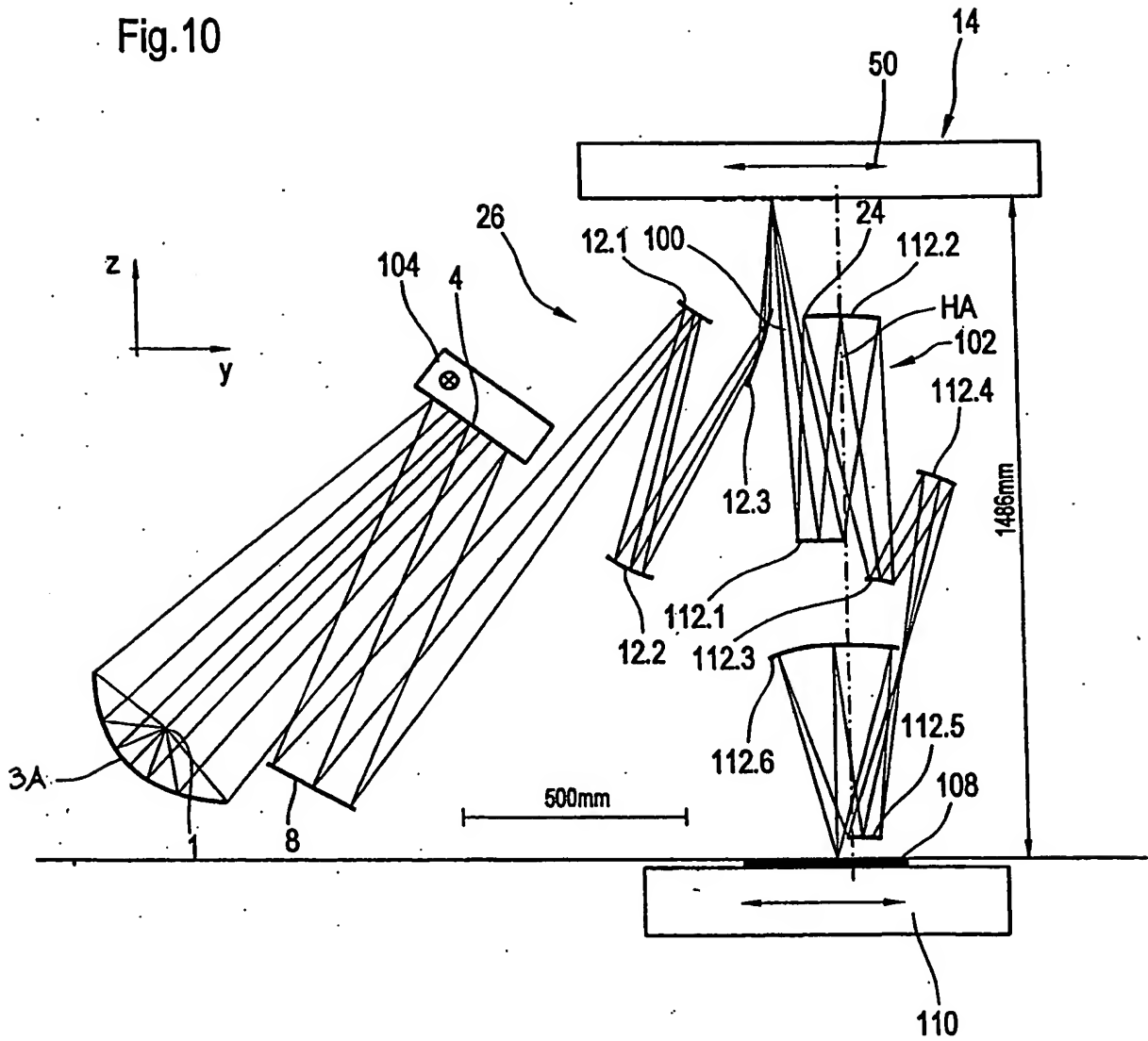
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Fig.10



Opponent *fig* 5-10-06

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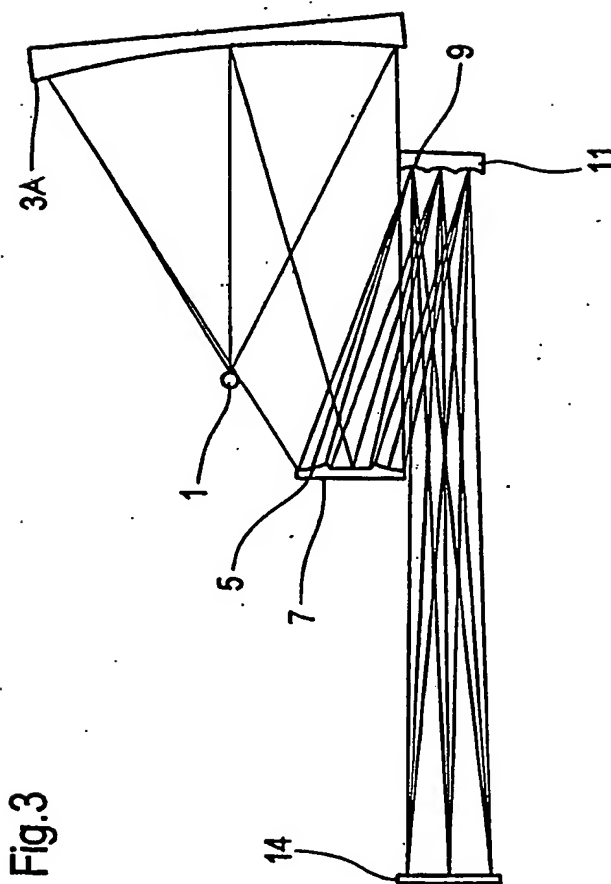


Fig.3